



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/552,902	10/13/2005	Ulrich Weidmann	HAM P2072	6910
62067	7590	08/09/2007	EXAMINER	
HUNTSMAN ADVANCED MATERIALS AMERICAS INC.			ARNBERG, MEGAN C	
LEGAL DEPARTMENT				
10003 WOODLOCH FOREST DRIVE			ART UNIT	
THE WOODLANDS, TX 77380			PAPER NUMBER	
			1709	
			MAIL DATE	
			DELIVERY MODE	
			08/09/2007	
			PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/552,902	Applicant(s) WEIDMANN, ULRICH	
	Examiner Megan Arnberg	Art Unit 1709	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 October 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 13-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 13-17 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Blyakhman (U.S. 5,591,811).

Regarding claims 13-17: Blyakhman teaches a compound of general formula (I) of the instant application where R is hydrogen; R1, R2, and R3 are each independently of the other hydrogen; alkyl of 1 to 12 carbon atoms; cycloalkyl of 3 to 12 carbon atoms, which could be substituted by alkyl groups of 1 to 4 carbon atoms; cycloalkyl-alkyl of 4

Art Unit: 1709

to 20 carbon atoms which can be substituted by alkyl groups of 1 to 4 carbon atoms; aryl of 6 to 10 carbon atoms, which could be substituted by 1 to 3 alkyl groups of 1 to 4 carbon atoms; phenylalkyl of 7 to 15 carbon atoms, which could be substituted by 1 to 3 alkyl groups of 1 to 4 carbon atoms; alkenyl of 3 to 12 carbon atoms; alkynyl of 3 to 12 carbon atoms; aromatic or aliphatic acyl group of 3 to 12 carbon atoms or alkyl or aryl of 3 to 12 carbon atoms containing a cyano group or a halogen; R4, R5, R6, R7, R8, and R9 are each independently of the other hydrogen; alkyl of 1 to 12 carbon atoms; cycloalkyl of 3 to 12 carbon atoms, which can be substituted by alkyl groups of 1 to 4 carbon atoms; cycloalkyl-alkyl of 4 to 20 carbon atoms, which can be substituted by alkyl groups of 1 to 4 carbon atoms; aryl of 6 to 10 carbons atoms, which can be substituted by 1 to 3 alkyl groups of 1 to 4 carbon atoms; phenylalkyl of 7 to 15 carbon atoms, which can be substituted by 1 to 3 alkyl groups of 1 to 4 carbon atoms; alkenyl of 3 to 12 carbon atoms; alkynyl of 3 to 12 carbon atoms; halogen; alkoxy of 1 to 12 carbon atoms; or hydroxyl (formula (I) and col. 2 line 59- col. 3 line 16).

Regarding claim 23: Blyakhman teaches adding the compound of formula (I) to an epoxy resin (col. 4 lines 54-58) and that curing agents can also be used with the composition (col. 5 lines 41-48).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 1709

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Blyakhman as applied to claims 13, 14, 16, and 17 above, in view of Okita et al. (U.S. 5,298,649).

Blyakhman teaches the basic claimed compound as set forth above. Blyakhman does not teach the R radical to be n-butyl, n-nonyl, n-dodecyl, or allyl. However, Okita et al. teaches the R radical of formula (I) of the instant application to be a linear butyl group (col. 4 lines 50-55). Blyakhman and Okita et al. are combinable because they are both concerned with the same field of endeavor, namely derivatives of naphthalene. At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the radical of Okita et al. with the compound of Blyakhman and would have been motivated to do so because it is so similar in structure and function that a person having ordinary skill in the art would have a reasonable expectation that they would possess similar properties. See MPEP 2144.09.

Claims 19-22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blyakhman as applied to claims 13-17 and 23 above, in view of Klein et al. (U.S. 6,245,835).

Regarding claim 19: Blyakhman teaches the compound of formula (I) as set forth above in the amount of 2-25 parts by weight. Blyakhman further teaches an epoxy resin (abstract) made of a bisphenol A, which has 2 epoxy functional groups per molecule at

Art Unit: 1709

a molecular weight range of 1000 to 1500 (col. 5 lines 5-10). This corresponds to an epoxide equivalents range of 0.5 to 0.75 epoxide equivalents/kg. Blyakhman also teaches adding a curing agent for the epoxy resin and one or more additives (col. 5 lines 41-53). Blyakhman does not teach the curing agent to have 0.5 to 1.5 functional groups per epoxide group. However, Klein et al. teaches a curing agent for an epoxy resin having 0.5 to 2 functional equivalents per epoxy group (col. 11 lines 38-46).

Blyakhman and Klein et al. are combinable because they are both concerned with the same field of endeavor, namely cured epoxy resins with an imidazole catalyst. At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the functional group ratio of Klein et al. with the composition of Blyakhman and would have been motivated to do so because with this ratio of functional groups the composition will not have much excess unreacted epoxy resin or curing agent, which would lead to decreased viscosity.

Regarding claim 20: Blyakhman and Klein et al. both further teach a polyamine curing agent (Blyakhman col. 5 lines 41-48 & Klein et al. col. 16 lines 14-49).

Regarding claim 21: Klein et al. further teaches a polyoxypropylenediamine curing agent (col. 16 line 38). At the time of the invention a person having ordinary skill in the art would have found it obvious to use a polyoxypropylenediamine as a polyamine curing agent and would have been motivated to do so because polyoxypropylenediamine is more reactive curing agent for epoxy resins.

Regarding claim 22: Blyakhman teaches using cycloaliphatic epoxy resins (col. 3 lines 17-48).



Art Unit: 1709

Regarding claim 24: Klein et al. further teaches dissolving the curing agent into the organic solvent (col. 1 lines 12-16) at a temperature between 50 °C and 150 °C. At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the method of making the compound in Klein et al. with the compound of Blyakhman and would have been motivated to do so because dispersing the curing agent before it is allowed to react with the epoxy resin will yield a more homogenous resin, and doing so at these temperatures lowers the viscosity to improve the mixing and thus decrease the non-uniformities in the end product.

Claim 25 rejected under 35 U.S.C. 103(a) as being unpatentable over Blyakhman, in view of Klein et al. as applied to claims 19, 20, and 22 above and in further view of Forgo et al. (U.S. 4,666,954).

Blyakhman teaches the curable claimed composition as set forth above. Blyakhman does not teach a prepreg comprising the curable composition. However, Forgo et al. teaches a prepreg comprising an amine cured epoxy resin (abstract). Blyakhman and Klein et al. are combinable because they are both concerned with the same field of endeavor, namely epoxy resins and amine curing agents. At the time of the invention a person having ordinary skill in the art would have found it obvious to make a prepreg with the composition and would have been motivated to do so because it is known in the art that an application for epoxy resins is prepregs.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 13-25 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6, 8-11, and 13-15 of copending Application No. 10/552,908 in view of Blyakhman, Klein et al., and Forgo et al. The copending application teaches adding a phenol to the instant composition containing the imidazole, to the instant composition containing the epoxy resin, to the instant method for making the curable composition, and to a prepreg comprising the instant curable composition. Blyakhman and Klein et al. teach adding a phenol to the compositions and method of making. Specifically Blyakhman teaches adding phenol-formaldehyde resins to the composition (col. 5 lines 41-48), and Klein et al. teaches adding a polyhydroxy hydrocarbon, which can be a bisphenol compound



Art Unit: 1709

(col. 4 lines 53 - col. 5 line 2). Forgo et al. teaches adding a bisphenol A to the prepreg made by the composition (col. 6 lines 4-22).

The copending application and Blyakhman are combinable because they both are concerned with the same field of endeavor, namely cured epoxy resins with an imidazole catalyst. The copending application and Klein et al. are combinable because they are both concerned with the same field of endeavor, namely cured epoxy resins with an imidazole catalyst. The copending application and Forgo et al. are combinable because they are both concerned with the same field of endeavor, namely preregs made with epoxy resins containing amine curing agents. At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the phenol with the composition and would have been motivated to do so because the phenol is a latent curing accelerator, as taught by Blyakhman (col. 5 lines 41-48).

This is a provisional obviousness-type double patenting rejection.

### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Megan Arnberg whose telephone number is (571) 270-3292. The examiner can normally be reached on Monday - Friday 7:30-5:00 EST.

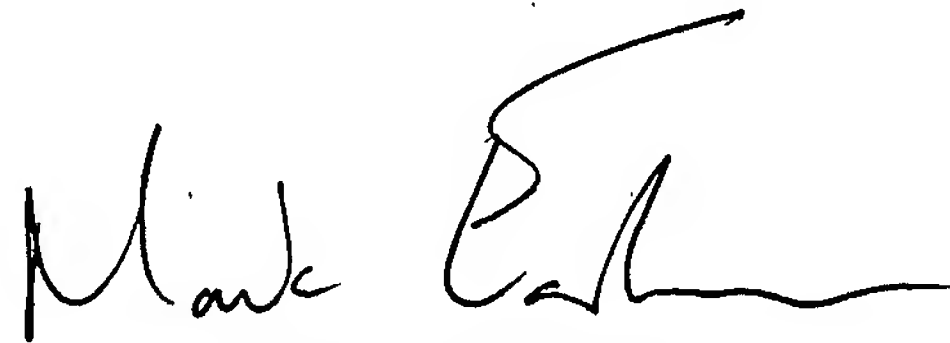
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571) 272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1709

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Megan Arnberg  
July 31, 2007

MEA



MARK EASHOO, PH.D.  
SUPERVISORY PATENT EXAMINER

03/Aug/07